Claims

1. Electromechanical drive element, in particular for the exact positioning of an object in the nanometer to centimeter range, comprising a rotor (11) supported in a bearing element and at least one piezoelectric element (18) that can be acted upon with an electric voltage, characterized in that the bearing element (12, 13, 14) comprises at least one rotor receptacle (16) supported on a bearing block (15) in a fashion that allows it to be rotated with limits, which rotor receptacle (16) can be rotated by the expansion and/or contraction—induced by an electric voltage—of the at least one piezoelectric element (18).

2. Drive element according to Claim 1, characterized in that the rotor (11) is supported in the at least one rotor receptacle (16) in a fashion that allows it to be rotated with friction.

3. Drive element according to Claim 1 or 2, characterized in that the at least one rotor receptacle is a bearing ring (16) that is supported on the bearing block (15) by way of multiple fixed members.

4. Drive element according to one of the Claims 1 through 3, characterized in that the bearing element (12, 13, 14) has two bearing rings (16) as rotor receptacles supported on bearing blocks (15) by way of multiple fixed members (17) in which the ends (11.1, 11.2) of the rotor (11) are supported, whereby at least one of the bearing rings (16) can be rotated by means of at least one piezoelectric element (18).

5. Drive element according to one of the Claims 1 through 3, characterized in that the bearing element (12, 13, 14) has a piezoelectrically driven bearing ring (16) to accommodate one end (11.1) of the rotor (11), and a lower-friction abutment for the other end (11.2) of the rotor (11).

6. Drive element according to one of the Claims 2 through 5, characterized in that the friction between the rotor (11) and the at least one rotor receptacle (16) is such that the rotor (11) does not follow relatively rapid revolutions of the at least one rotor receptacle (16), but follows relatively slow revolutions of the at least one rotor receptacle (16).

7. Drive element according to Claim 6, characterized in that the electrodes of the at least one piezoelectric element (18) are connected to a saw-tooth voltage generator that generates alternating slow and rapid expansions and contractions of the at least one piezoelectric element (18) and, therefore, revolutions of the at least one rotor receptacle (16), whereby the rotor (11) follows the slow revolutions and does not follow the rapid revolutions.

8. Drive element according to one of the Claims 1 through 7, characterized in that the rotor (11) has tapering ends.

9. Drive element according to Claim 8, characterized in that the rotor (11) has ends designed in the shape of spherical cups.